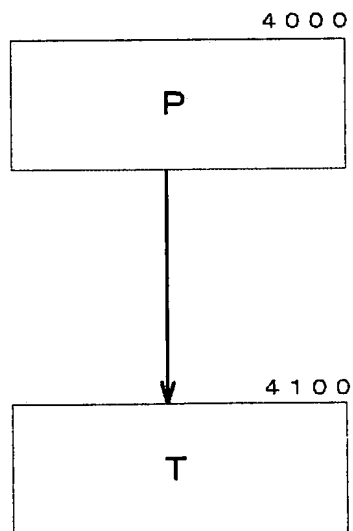


FIG. 1



172.16.100.100

FIG. 2

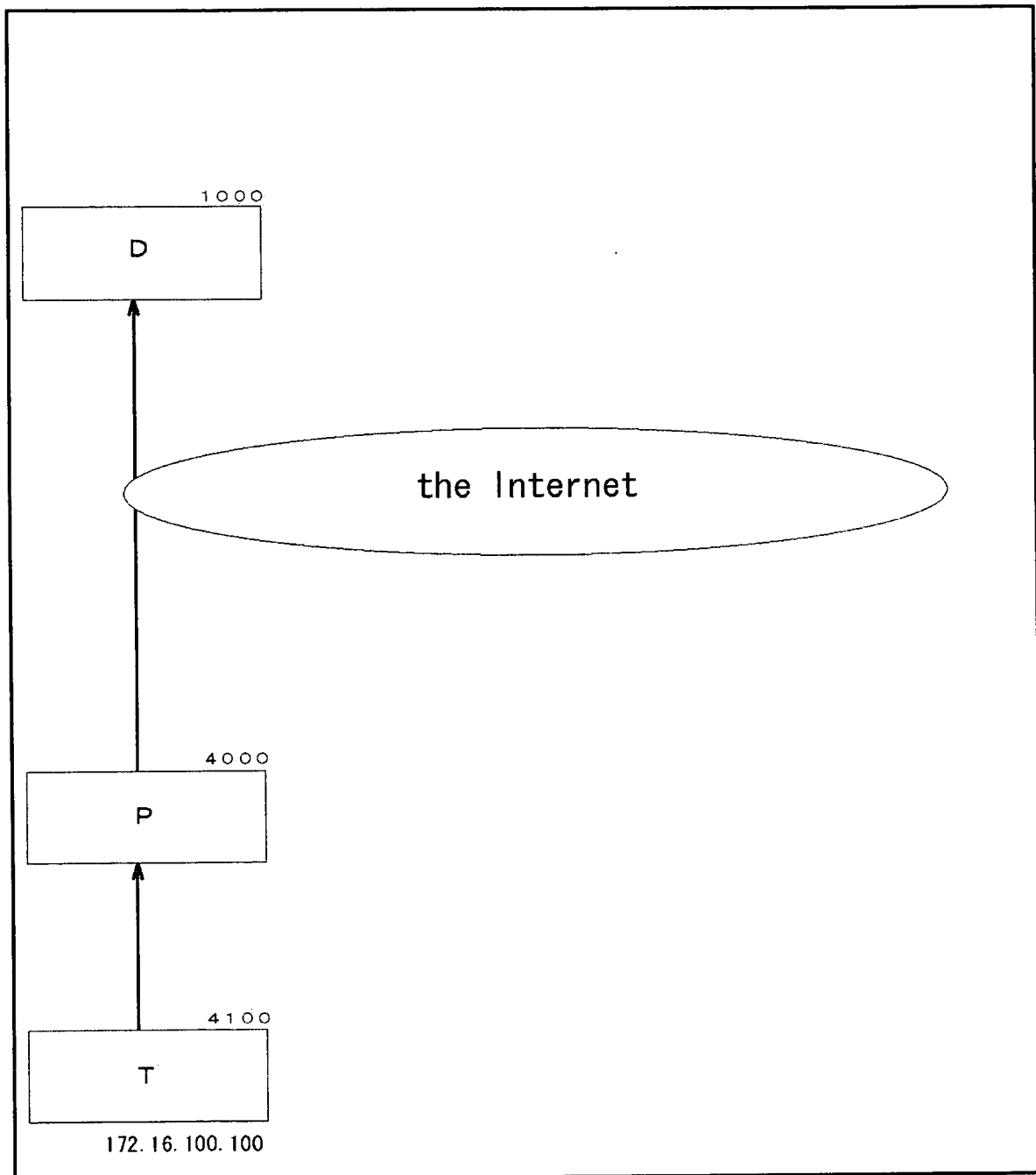


FIG. 3

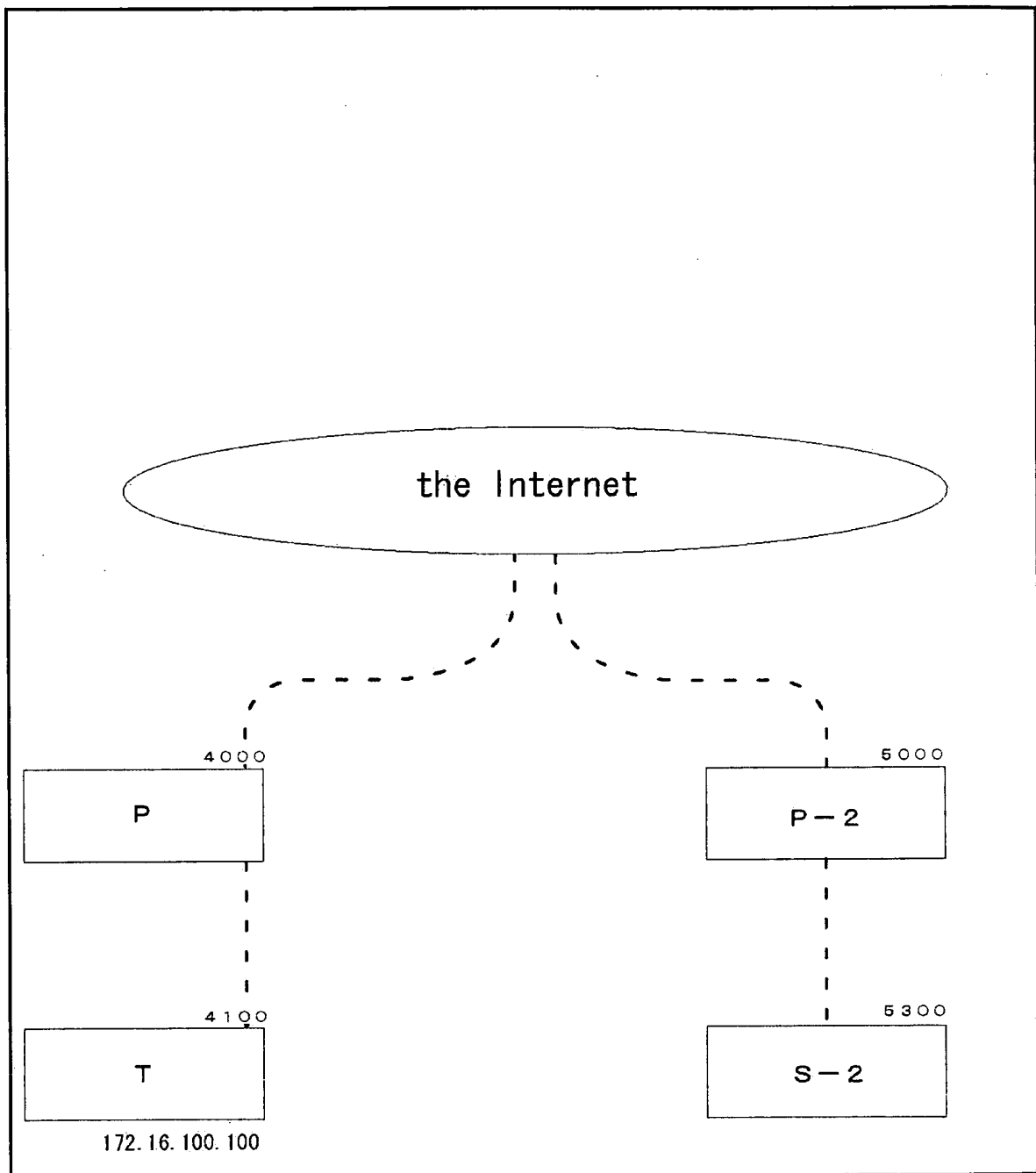


FIG. 4

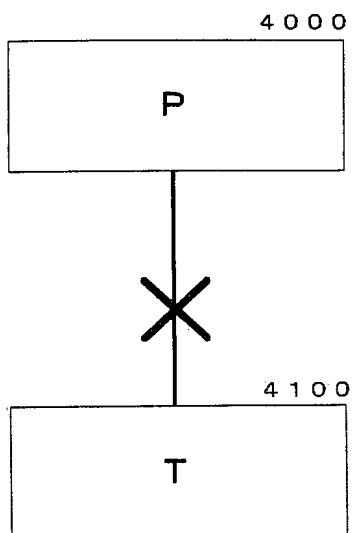


FIG. 5

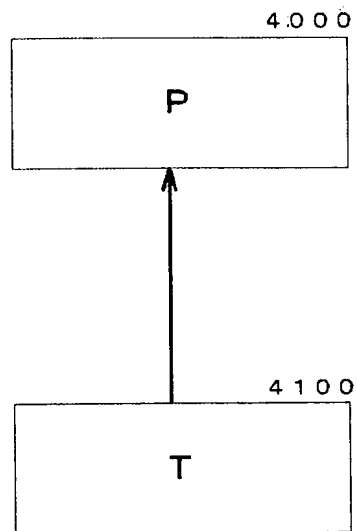


FIG. 6

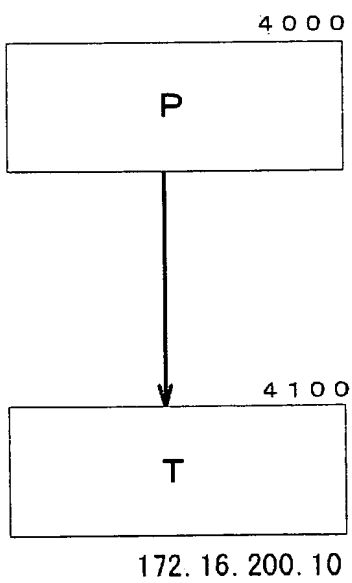


FIG. 7

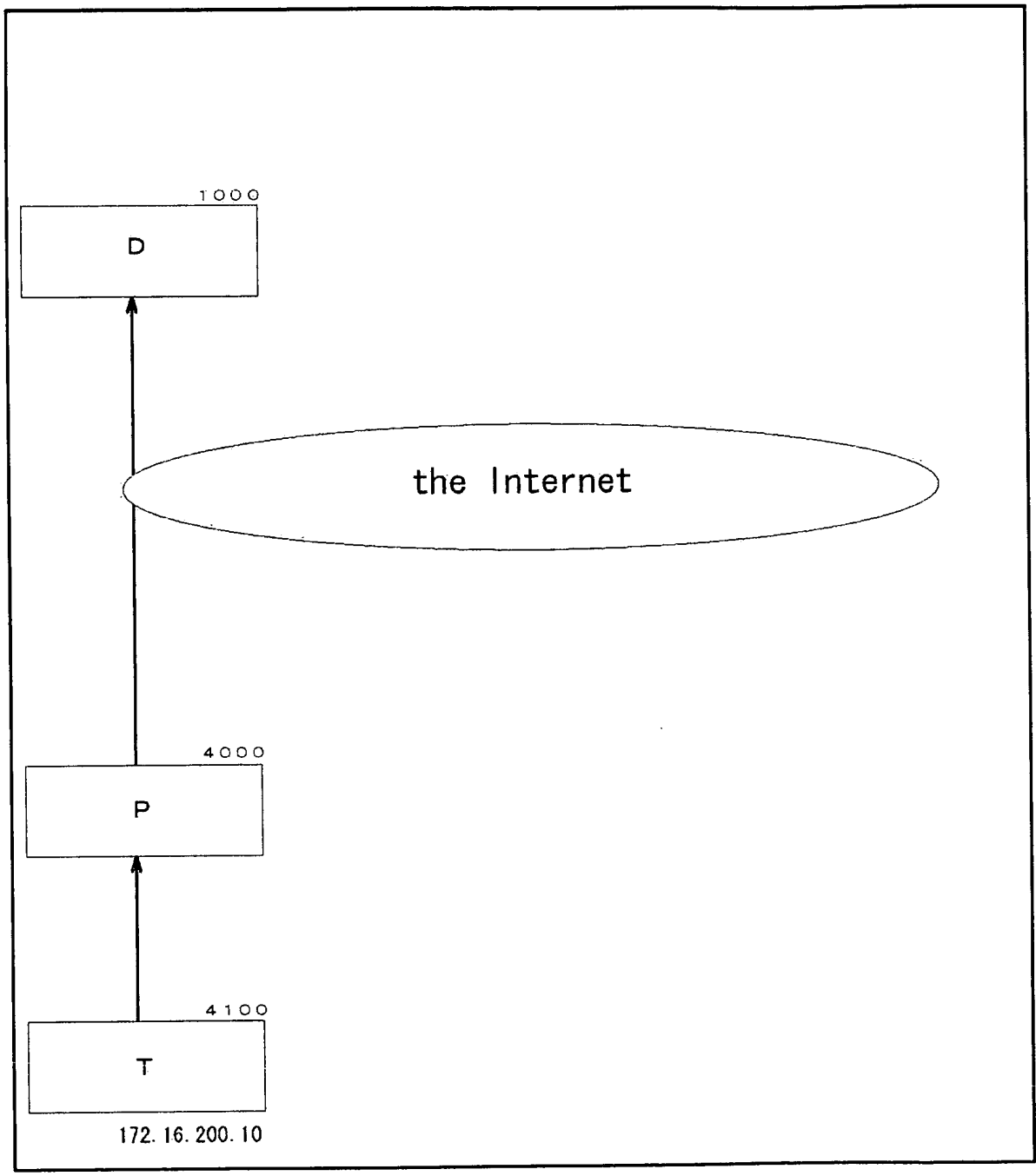


FIG. 8

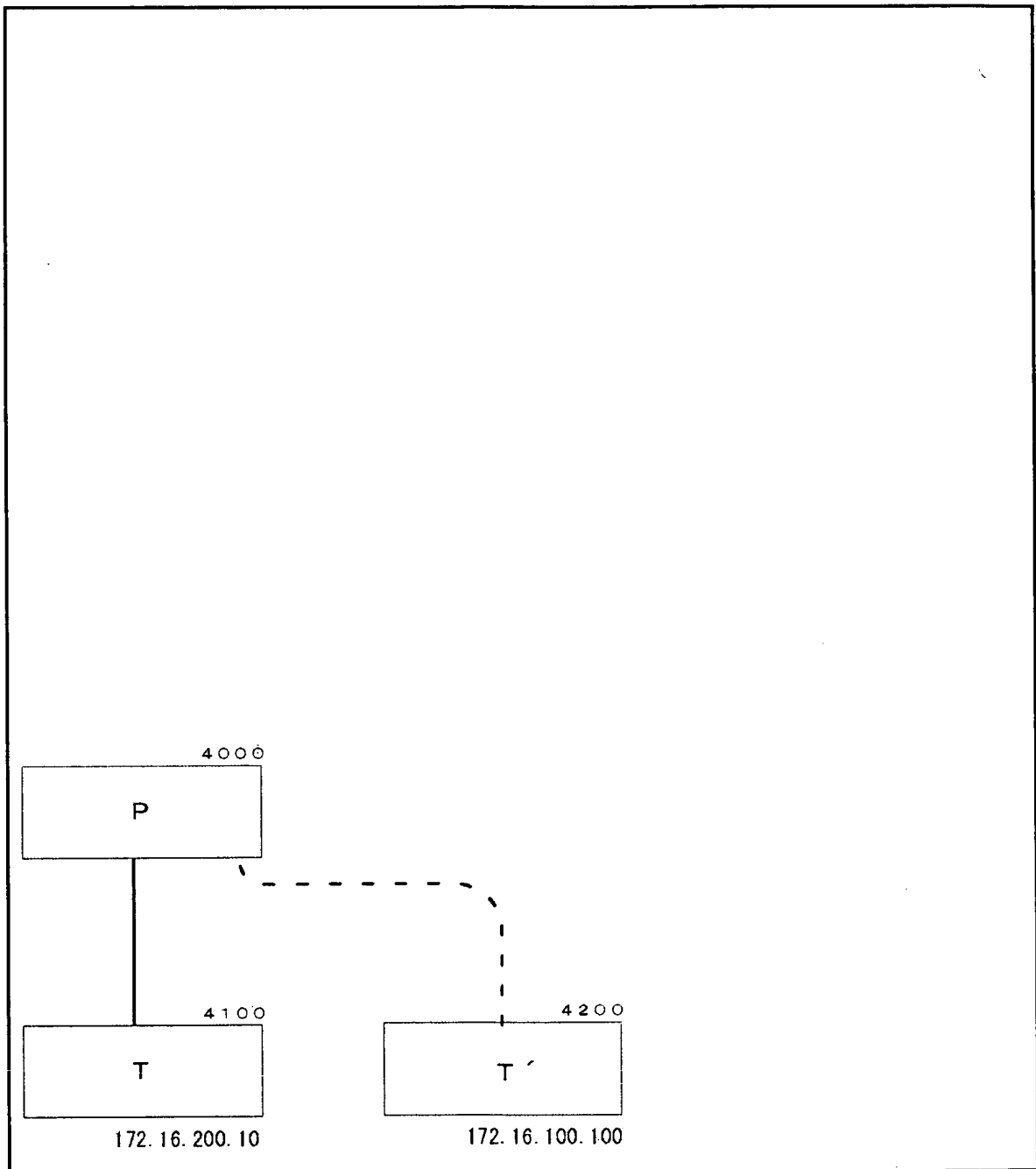


FIG. 9

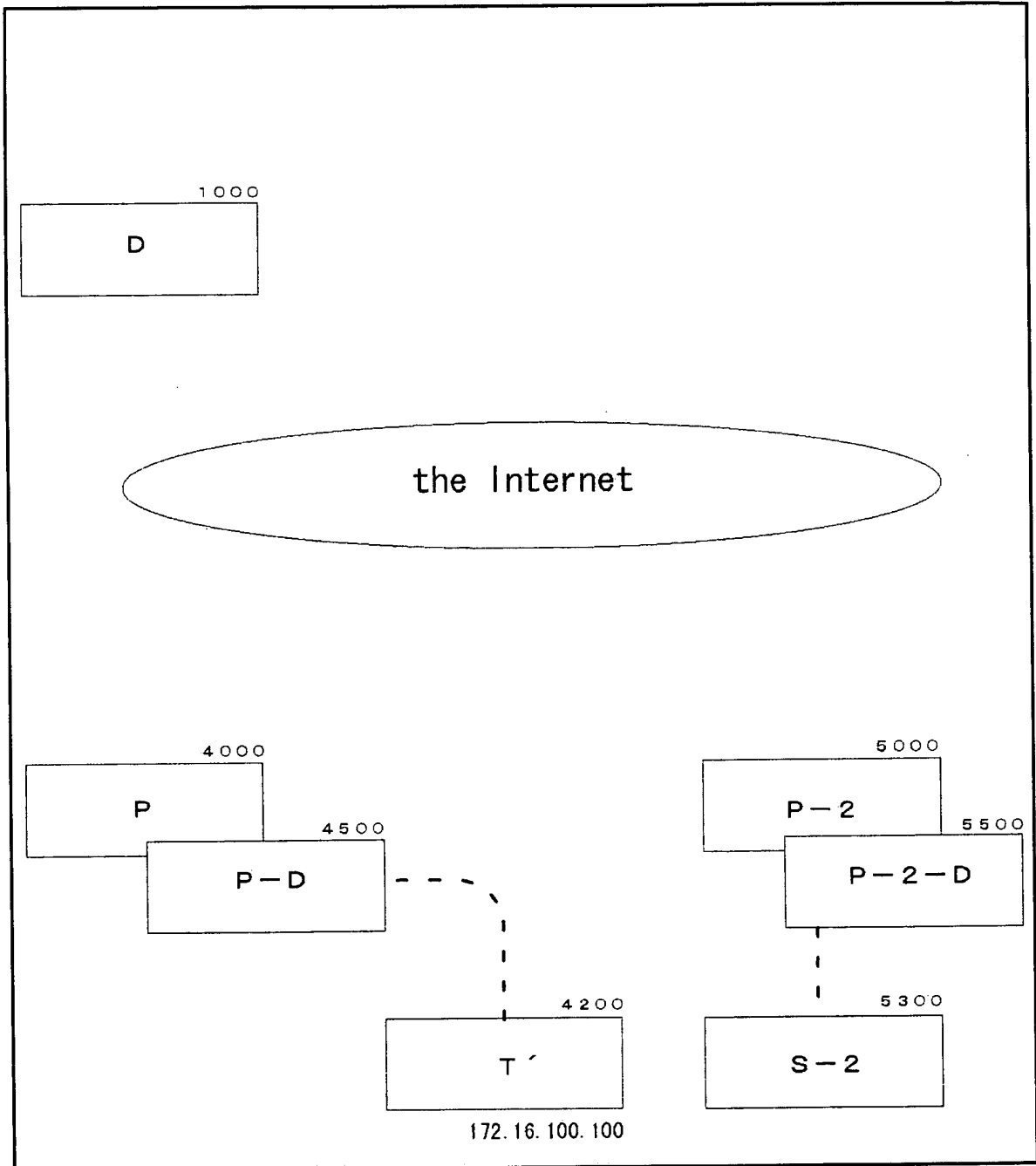


FIG. 10

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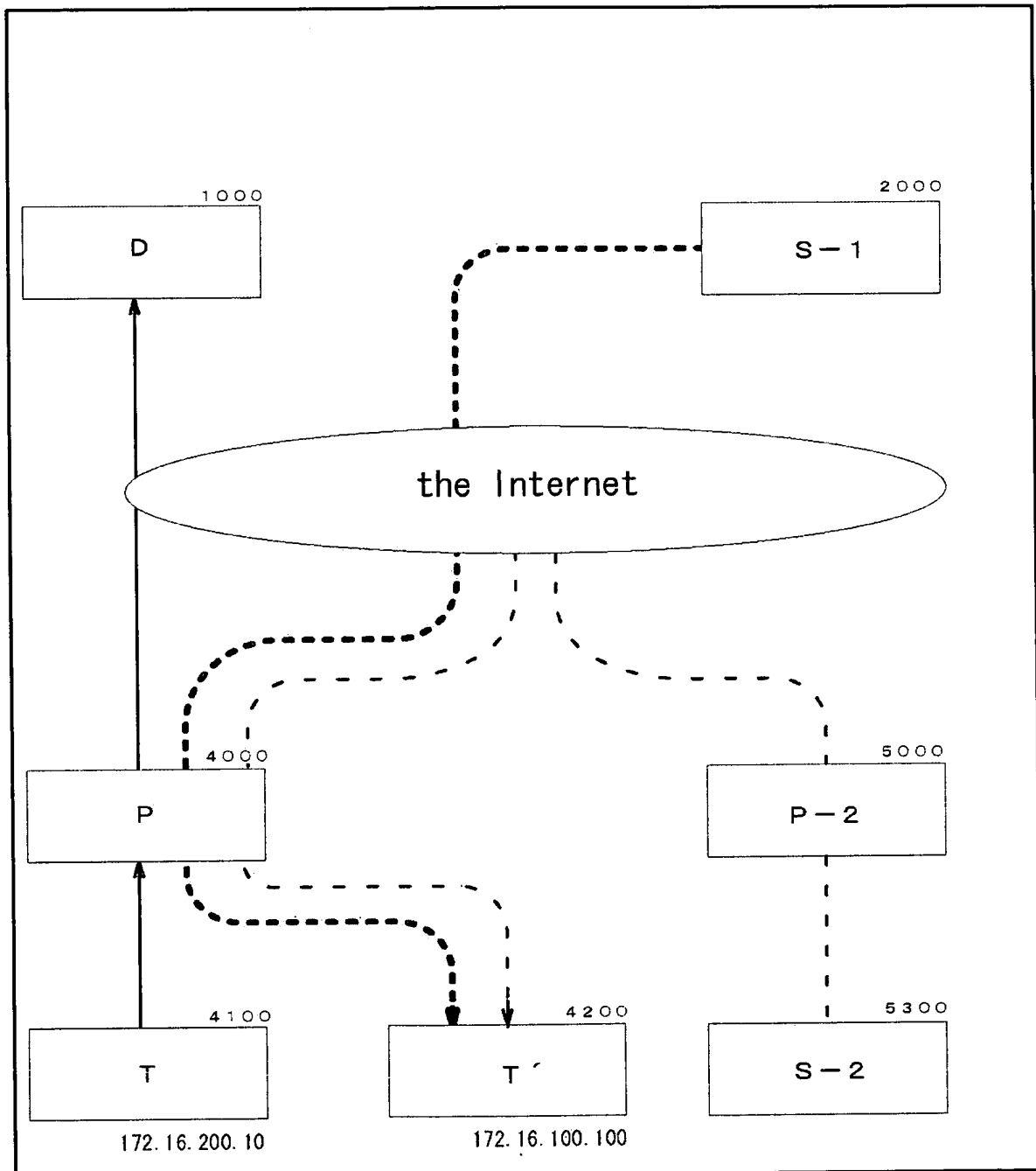


FIG. 11

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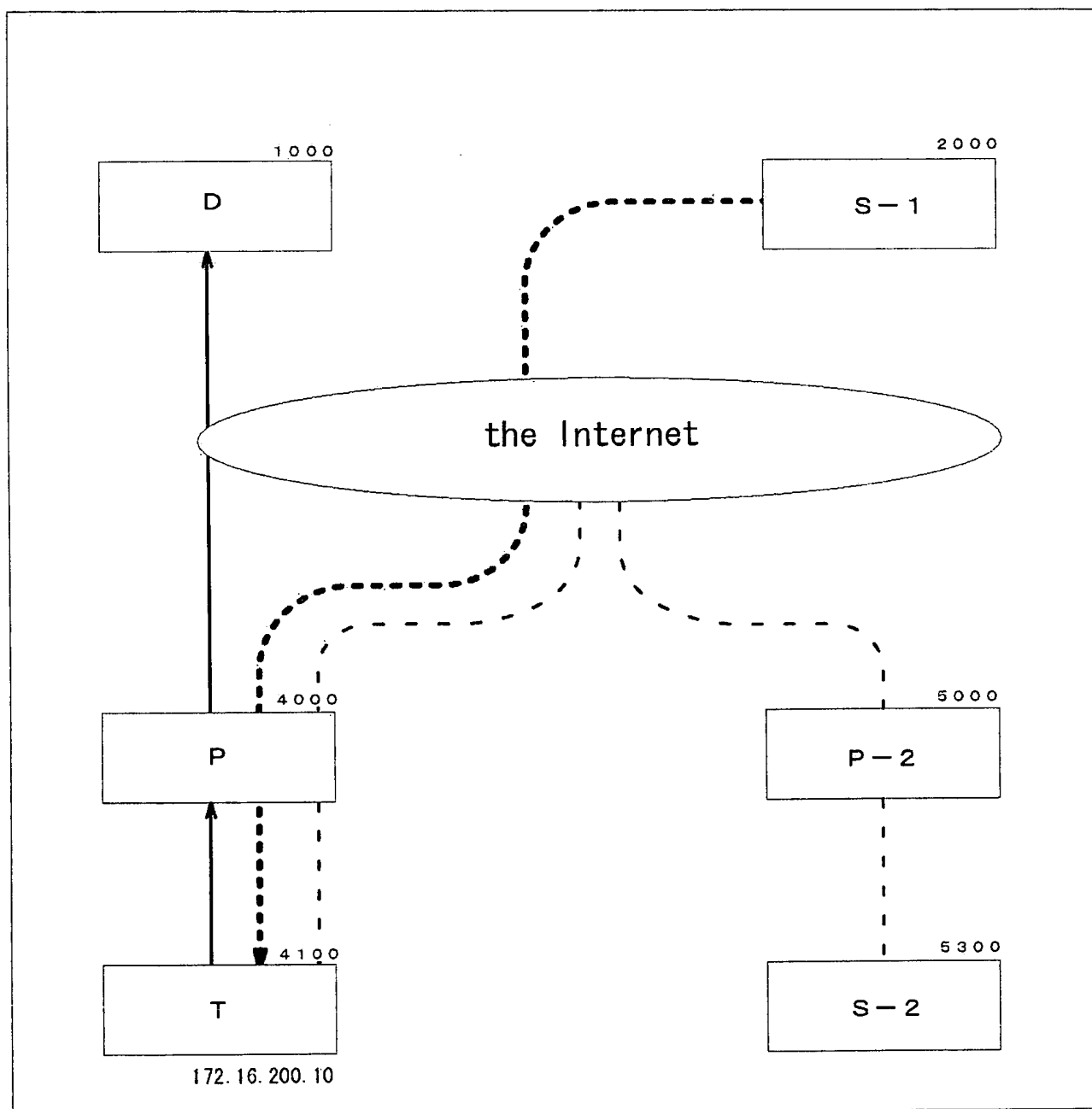


FIG. 12

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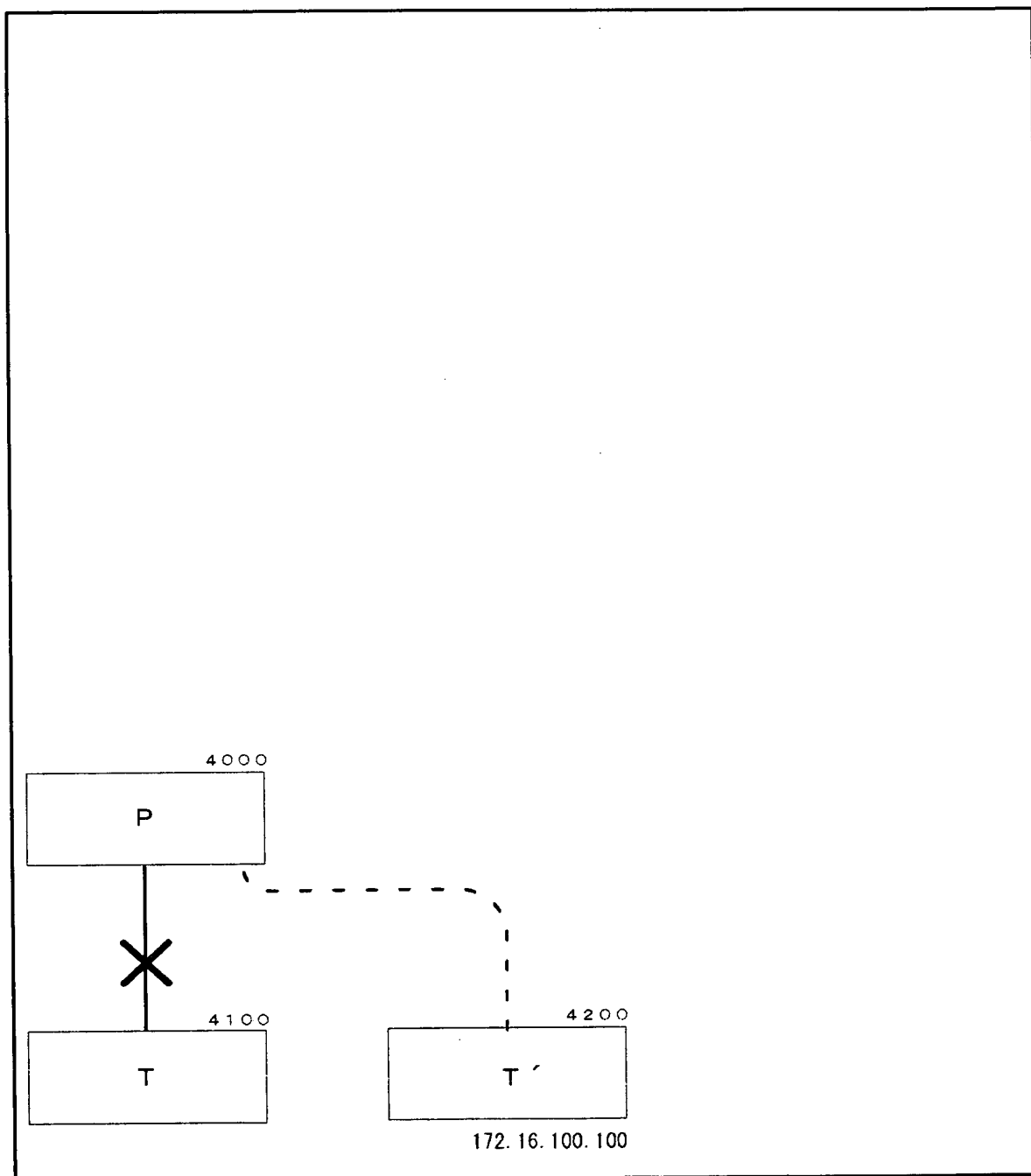


FIG. 13

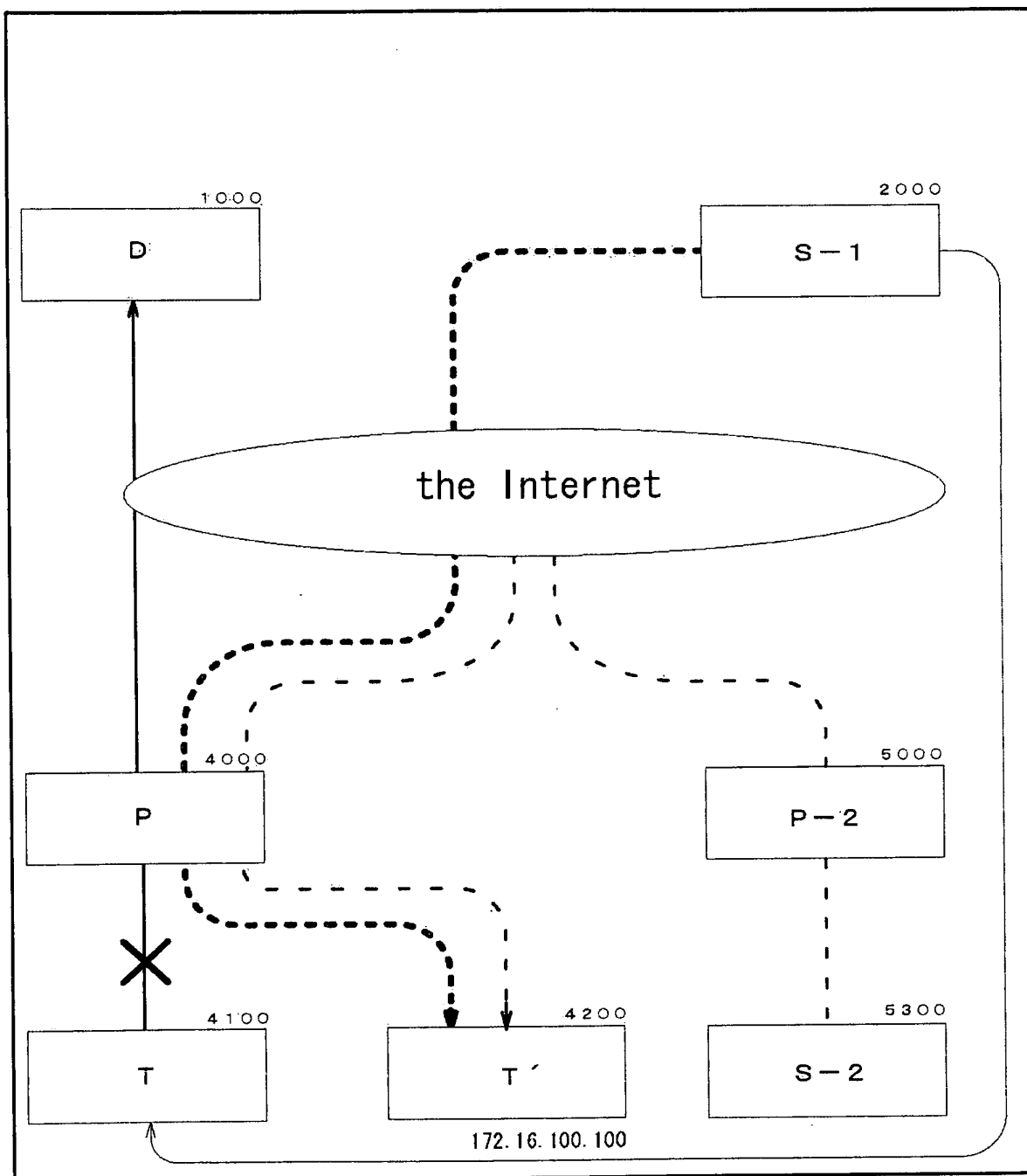


FIG. 14

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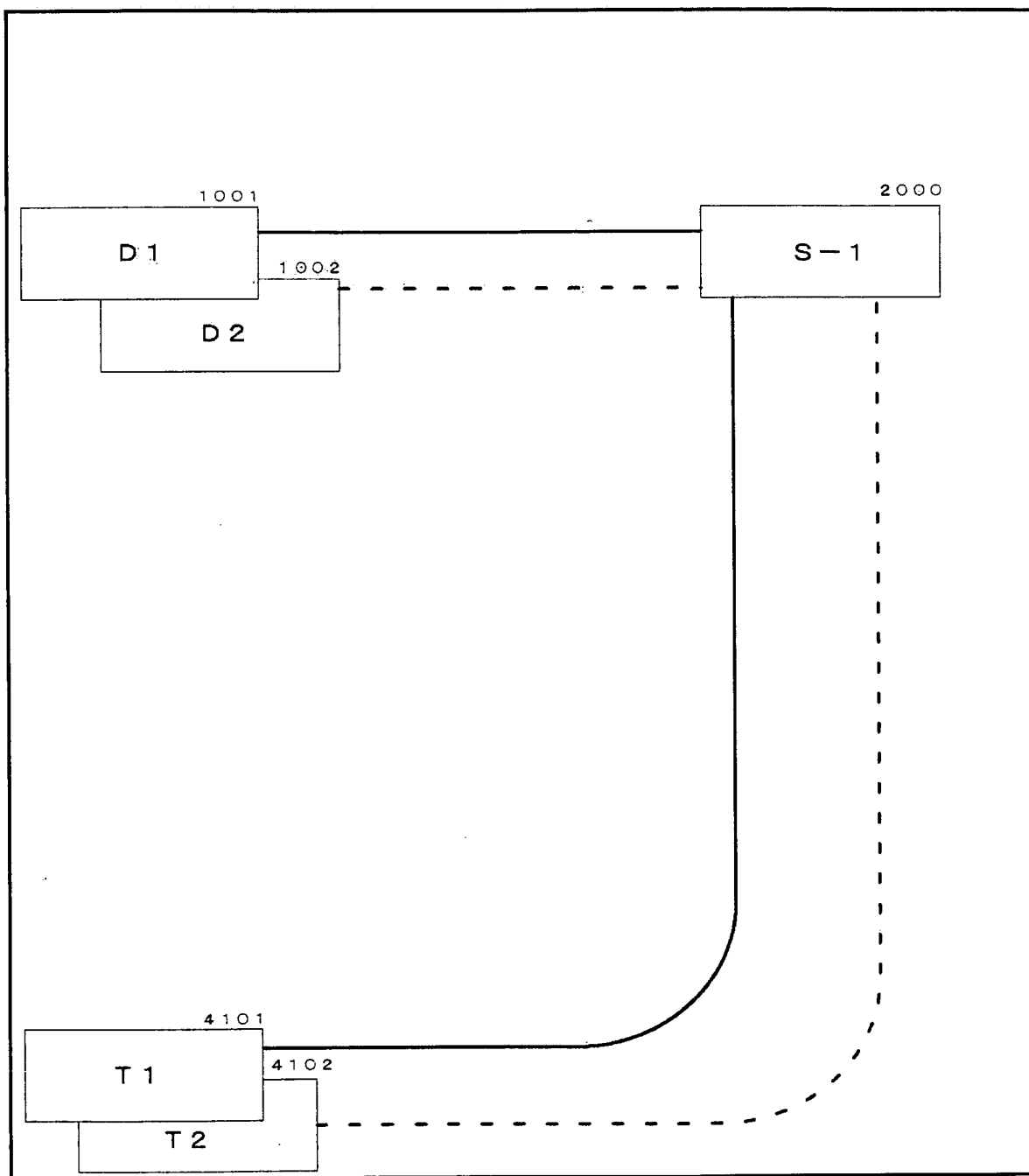


FIG. 15

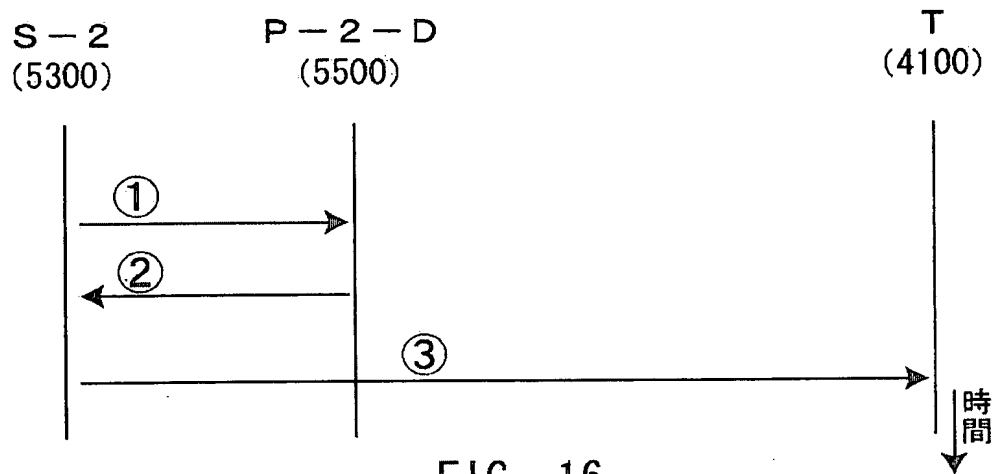


FIG. 16

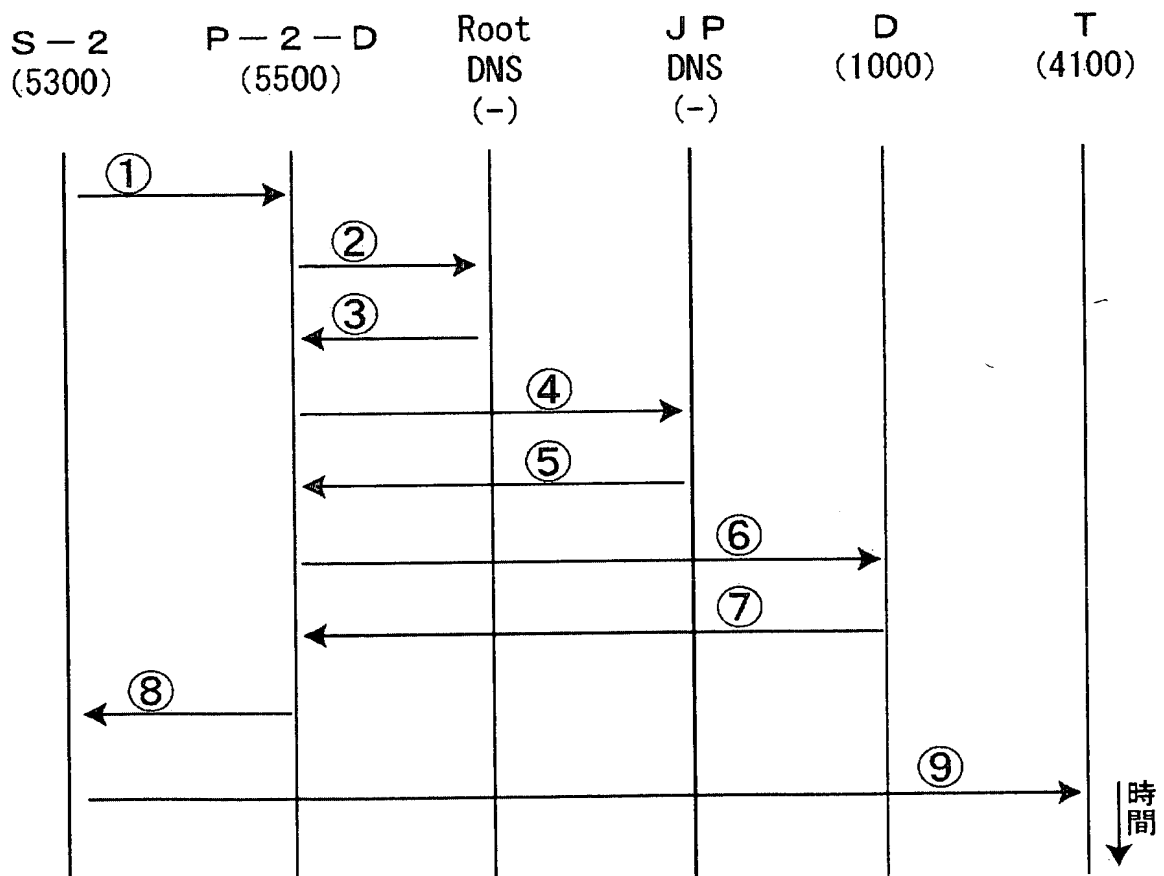


FIG. 17

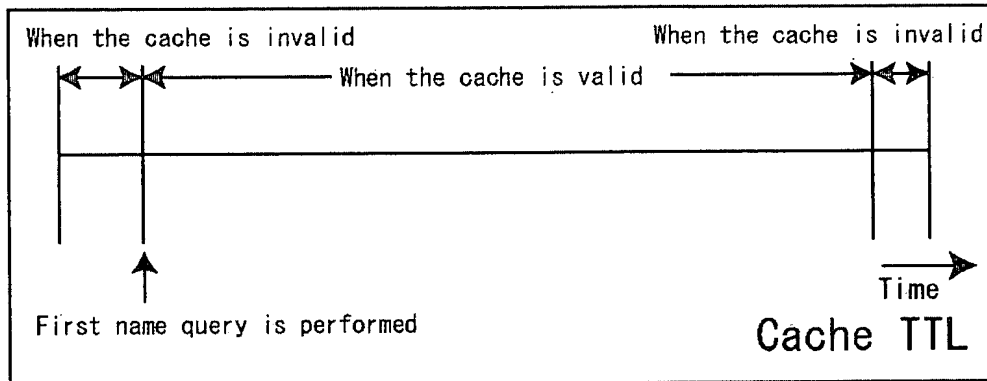


FIG. 18

```

date >> $LOG
echo -n "result od DIG :" >> $LOG
dig @209.69.32.137 bsdguru.dyndns.org | grep bsdguru.dyndns.org | -->
  grep "IN A" | cut -f4 >> $LOG
ping -c 2 bsdguru.dyndns.org >> $LOG
sleep 1

```

FIG. 19

```
1
Thu Sep 12 23:59:36 JST 2002
result of DIG :210.159.30.63 a
PING bsdguru.dyndns.org (210.159.30.63): 56 data bytes
64 bytes from 210.159.30.63: icmp_seq=0 ttl=246 time=70.996 ms
64 bytes from 210.159.30.63: icmp_seq=1 ttl=246 time=83.131 ms
b

--- bsdguru.dyndns.org ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max/stddev = 70.996/77.064/83.131/6.067 ms


2
Thu Sep 12 23:59:39 JST 2002
result of DIG :218.218.1.196 c
PING bsdguru.dyndns.org (210.159.30.63): 56 data bytes
64 bytes from 210.159.30.63: icmp_seq=0 ttl=246 time=84.041 ms
64 bytes from 210.159.30.63: icmp_seq=1 ttl=246 time=98.320 ms
d

--- bsdguru.dyndns.org ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max/stddev = 84.041/91.180/98.320/7.139 ms


3
Thu Sep 12 23:59:41 JST 2002
result of DIG :218.218.1.196
PING bsdguru.dyndns.org (210.159.30.63): 56 data bytes
64 bytes from 210.159.30.63: icmp_seq=0 ttl=246 time=91.660 ms
64 bytes from 210.159.30.63: icmp_seq=1 ttl=246 time=87.170 ms

--- bsdguru.dyndns.org ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max/stddev = 87.170/89.415/91.660/2.245 ms
```

FIG. 20

4
Thu Sep 12 23:59:43 JST 2002
result od DIG :218.218.1.196
PING bsdguru.dyndns.org (210.159.30.63): 56 data bytes
64 bytes from 210.159.30.63: icmp_seq=0 ttl=246 time=87.492 ms
64 bytes from 210.159.30.63: icmp_seq=1 ttl=246 time=70.174 ms

--- bsdguru.dyndns.org ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max/stddev = 70.174/78.833/87.492/8.659 ms

15
Fri Sep 13 00:00:37 JST 2002
result od DIG :218.218.1.196
PING bsdguru.dyndns.org (210.159.30.63): 56 data bytes
64 bytes from 210.159.30.63: icmp_seq=0 ttl=246 time=98.655 ms
64 bytes from 210.159.30.63: icmp_seq=1 ttl=246 time=81.907 ms

--- bsdguru.dyndns.org ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max/stddev = 81.907/90.281/98.655/8.374 ms

16
Fri Sep 13 00:00:39 JST 2002
result od DIG :218.218.1.196 e
PING bsdguru.dyndns.org (218.218.1.196): 56 data bytes
64 bytes from 218.218.1.196: icmp_seq=0 ttl=52 time=111.375 ms
64 bytes from 218.218.1.196: icmp_seq=1 ttl=52 time=117.394 ms
f
--- bsdguru.dyndns.org ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max/stddev = 111.375/114.385/117.394/3.010 ms

FIG. 21

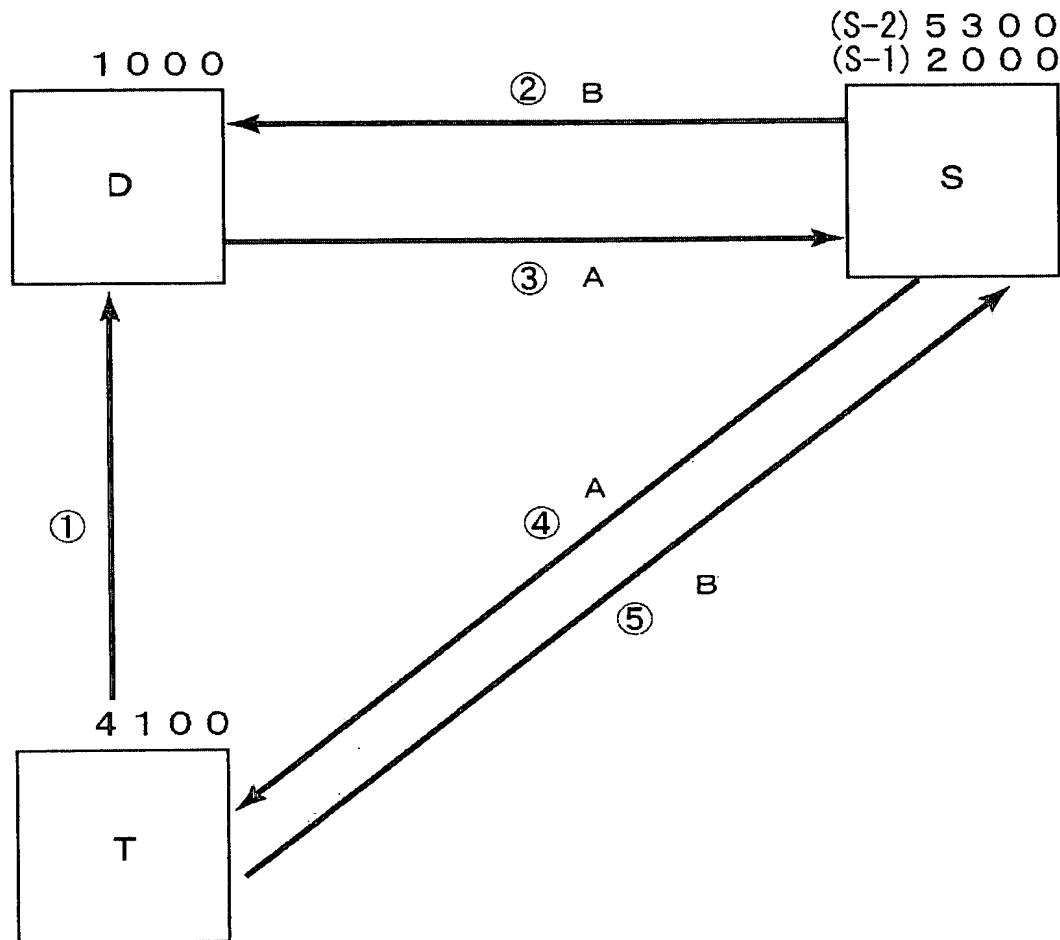


FIG. 22

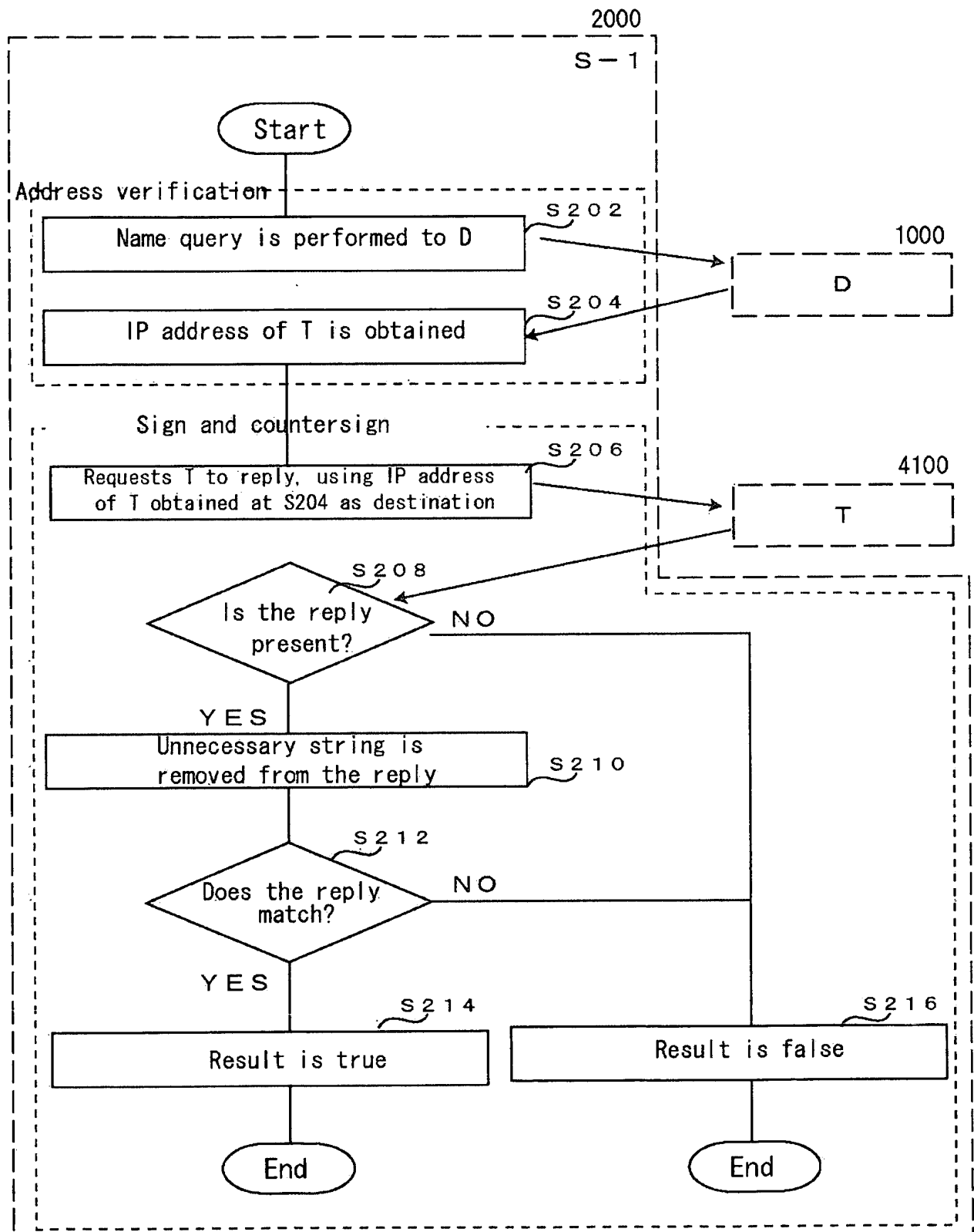


FIG. 23

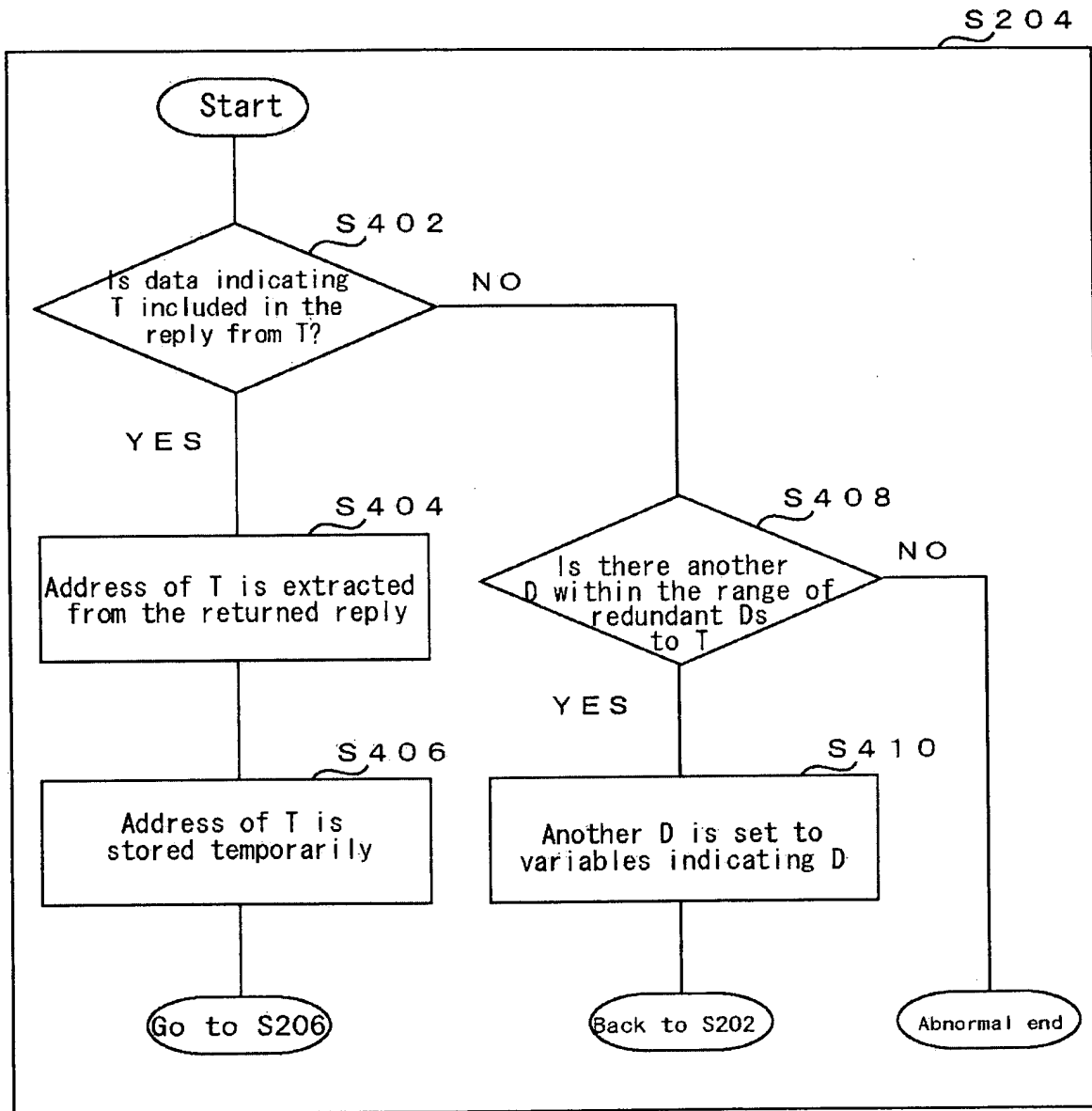


FIG. 24

```

% dig @ns1.dyndns.org bsdguru.dyndns.org

; <<>> DiG 8.3 <<>> @ns1.dyndns.org bsdguru.dyndns.org
; (1 server found)
;; res options: init recurs defnam dnsrch
;; got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 6
;; flags: qr aa rd; QUERY: 1, ANSWER: 1, AUTHORITY: 5, ADDITIONAL: 5
;; QUERY SECTION:
;;      bsdguru.dyndns.org. type = A, class = IN

;; ANSWER SECTION:
bsdguru.dyndns.org.      1M IN A      218.46.105.100

;; AUTHORITY SECTION:
dyndns.org.             1D IN NS      ns4.dyndns.org.
dyndns.org.             1D IN NS      ns5.dyndns.org.
dyndns.org.             1D IN NS      ns1.dyndns.org.
dyndns.org.             1D IN NS      ns2.dyndns.org.
dyndns.org.             1D IN NS      ns3.dyndns.org.

;; ADDITIONAL SECTION:
ns1.dyndns.org.         1D IN A      66.37.215.43
ns2.dyndns.org.         1D IN A      209.69.32.137
ns3.dyndns.org.         1D IN A      64.71.191.26
ns4.dyndns.org.         1D IN A      212.100.224.171
ns5.dyndns.org.         1D IN A      66.37.215.44

;; Total query time: 231 msec
;; FROM: open.names4commerce.net to SERVER: ns1.dyndns.org 66.37.215.43
;; WHEN: Fri Sep 13 23:24:31 2002
;; MSG SIZE sent: 36 rcvd: 222

```

FIG. 25

```
% dig @hhh.dyndns.org bsdguru.dyndns.org

; <<>> DiG 8.3 <<>> @hhh.dyndns.org bsdguru.dyndns.org
; (1 server found)
;; res options: init recurs defnam dnsrch
;; res_send to server hhh.dyndns.org 66.183.188.16: Operation timed out
% echo $status
9
```

FIG. 26

```
% dig @ns1.dyndns.org bsd2guru.dyndns.org

; <<>> DiG 8.3 <<>> @ns1.dyndns.org bsd2guru.dyndns.org
; (1 server found)
;; res options: init recurs defnam dnsrch
;; got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 6
;; flags: qr aa rd; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 0
;; QUERY SECTION:
;;      bsd2guru.dyndns.org. type = A, class = IN

;; AUTHORITY SECTION:
dyndns.org.          10M IN SOA      ns1.dyndns.org. hostmaster.dyndns.org. (
                                2057409667      : serial
                                10M           : refresh
                                5M            : retry
                                1W            : expiry
                                10M )         : minimum

;; Total query time: 215 msec
;; FROM: open.names4commerce.net to SERVER: ns1.dyndns.org 66.37.215.43
;; WHEN: Thu Sep 26 22:56:13 2002
;; MSG SIZE sent: 37 rcvd: 88

% echo $status
0
```

FIG. 27

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```
% snmpget 218.46.105.100 public system.sysName.0
system.sysName.0 = bsdguru.dyndns.org
% echo $status
0
```

FIG. 28

```
% snmpget 218.46.105.101 public system.sysName.0
Timeout: No Response from 218.46.105.101. ~ stderr
% echo $status
1
```

FIG. 29

```
% snmpget 218.46.105.100 wrongcommunity system.sysName.0 ~ stderr
Error in packet
Reason: (noSuchName) There is no such variable name in this MIB.
Failed object: system.sysName.0

% echo $status
2
```

FIG. 30

```
% snmpget 218.46.105.100 public system.sysLocation.0
system.sysLocation.0 = TEST
% echo $status
0
```

FIG. 31

```
options {
    directory "/etc/namedb";
    // forward only;
    forwarders {
        127.0.0.1;
    };
    version="Hyper-Rturner-BOX";
    // query-source address * port 53;
    // dump-file "s/named_dump.db";
};
```

FIG. 32

```
% dig @218.46.105.100 txt chaos version.bind

; <<>> DiG 8.3 <<>> @218.46.105.100 txt chaos version.bind
; (1 server found)
;; res options: init recurs defnam dnsrch
;; got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 6
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0
;; QUERY SECTION:
;;      version.bind, type = TXT, class = CHAOS

;; ANSWER SECTION:
VERSION.BIND.          OS CHAOS TXT      "Hyper-Returner-BOX"

;; Total query time: 76 msec
;; FROM: open.names4commerce.net to SERVER: 218.46.105.100
;; WHEN: Thu Sep 26 22:37:43 2002
;; MSG SIZE  sent: 30  rcvd: 73

% echo $status
0
```

FIG. 33

```
% dig @218.46.105.101 txt chaos version.bind

; <<>> DiG 8.3 <<>> @218.46.105.101 txt chaos version.bind
; (1 server found)
;; res options: init recurs defnam dnsrch
;; res_nsend to server 218.46.105.101: Operation timed out
% echo $status
9
```

stderr

FIG. 34

```
% dig @ns.korai.or.jp txt chaos version.bind

: <<>> DiG 8.3 <<>> @ns.korai.or.jp txt chaos version.bind
: (1 server found)
;; res options: init recurs defnam dnsrch
;; got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 6
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0
;; QUERY SECTION:
;;      version.bind, type = TXT, class = CHAOS

;; ANSWER SECTION:
VERSION.BIND.      OS CHAOS TXT      "4.9.7-REL"

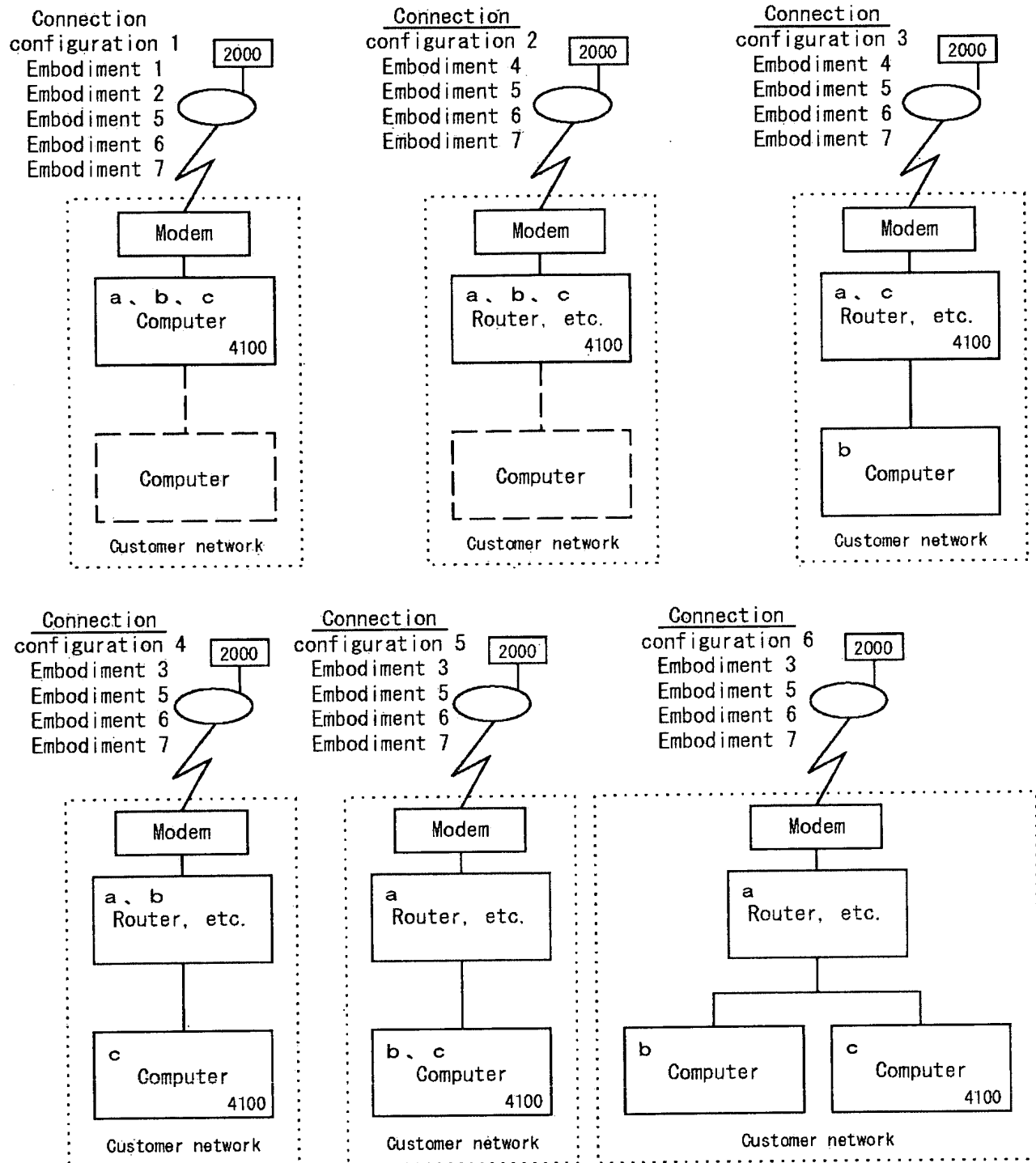
;; Total query time: 2 msec
;; FROM: open.names4commerce.net to SERVER: ns.korai.or.jp 202.217.175.5
;; WHEN: Thu Sep 26 22:40:57 2002
;; MSG SIZE sent: 30 rcvd: 64

% echo $status
0
```

FIG. 35

```
Trying 202.217.175.5...
Connected to po.korai.or.jp.
Escape character is '^]'.
220 ns.korai.or.jp ESMTP Sendmail 8.8.8/3.6W-99062802; Tue, 5 Nov 2002 02:14:35
+0900 (JST)
```

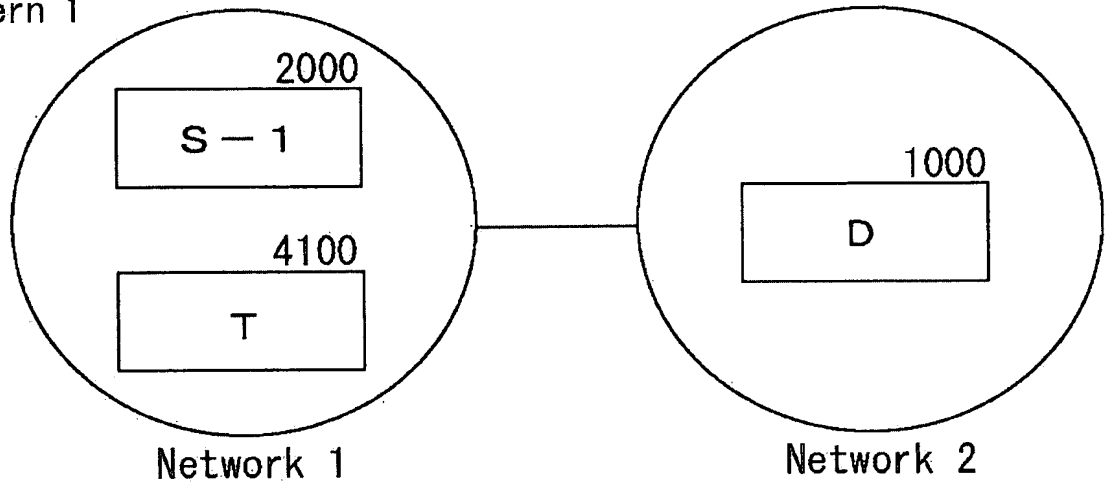
FIG. 36



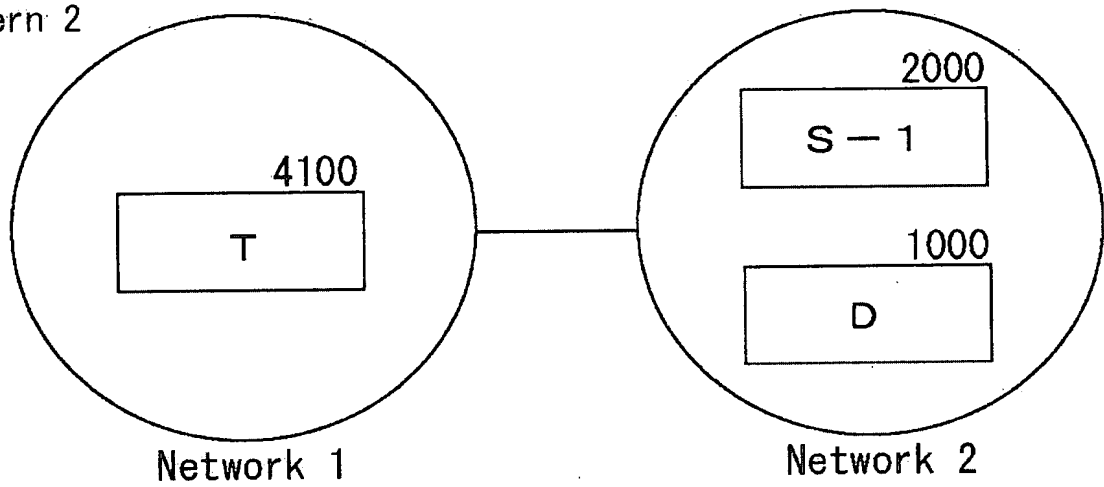
a = Host performing dial-up (assigned a dynamically assigned network address)
 b = Host performing dynamic update to D (1000)
 c = Host having function of T (4100)

FIG. 37

Pattern 1



Pattern 2



Pattern 3

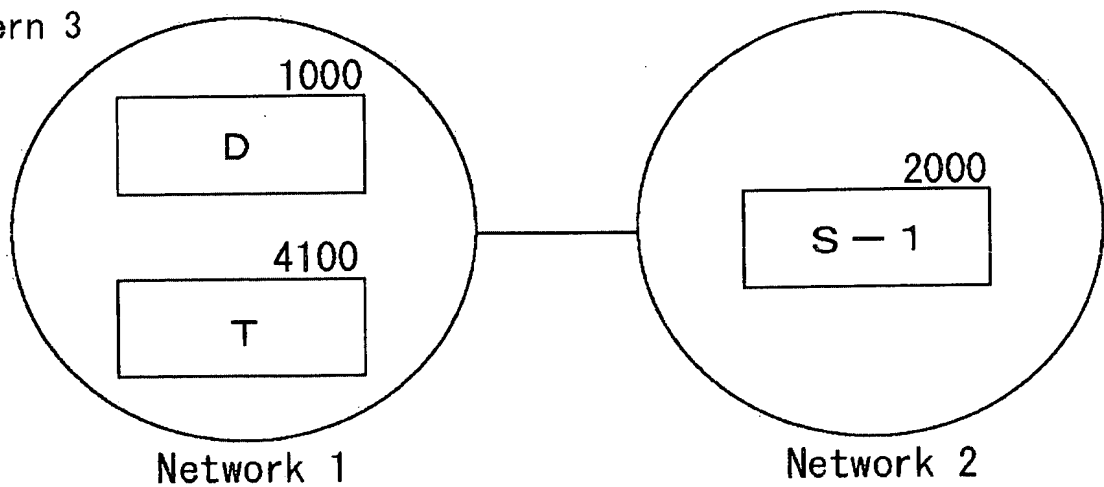
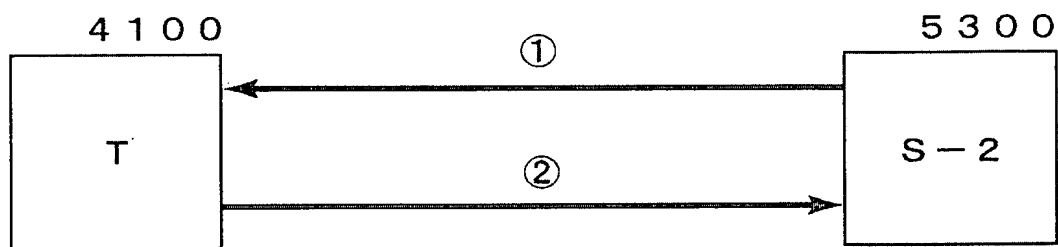
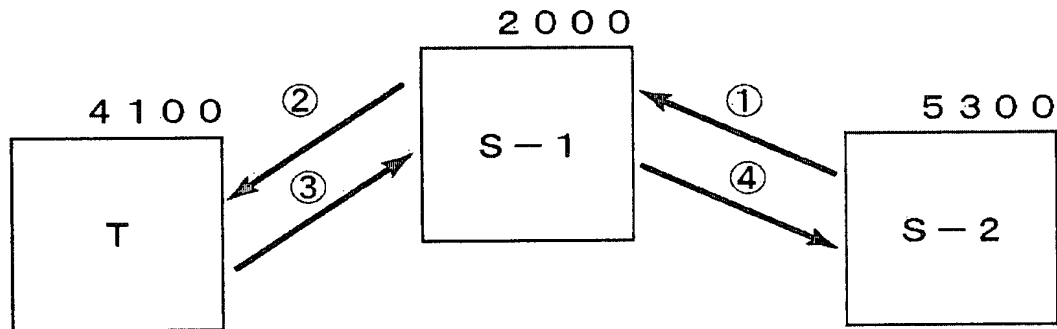


FIG. 38



(a)



(b)

FIG. 39

```
/usr/sbin/nsupdate -k $KEYDIR:$KEYNAME << EOF || $ERRFLG=ERROR
update delete $TARGETHOST A
```

```
EOF
```

FIG. 40

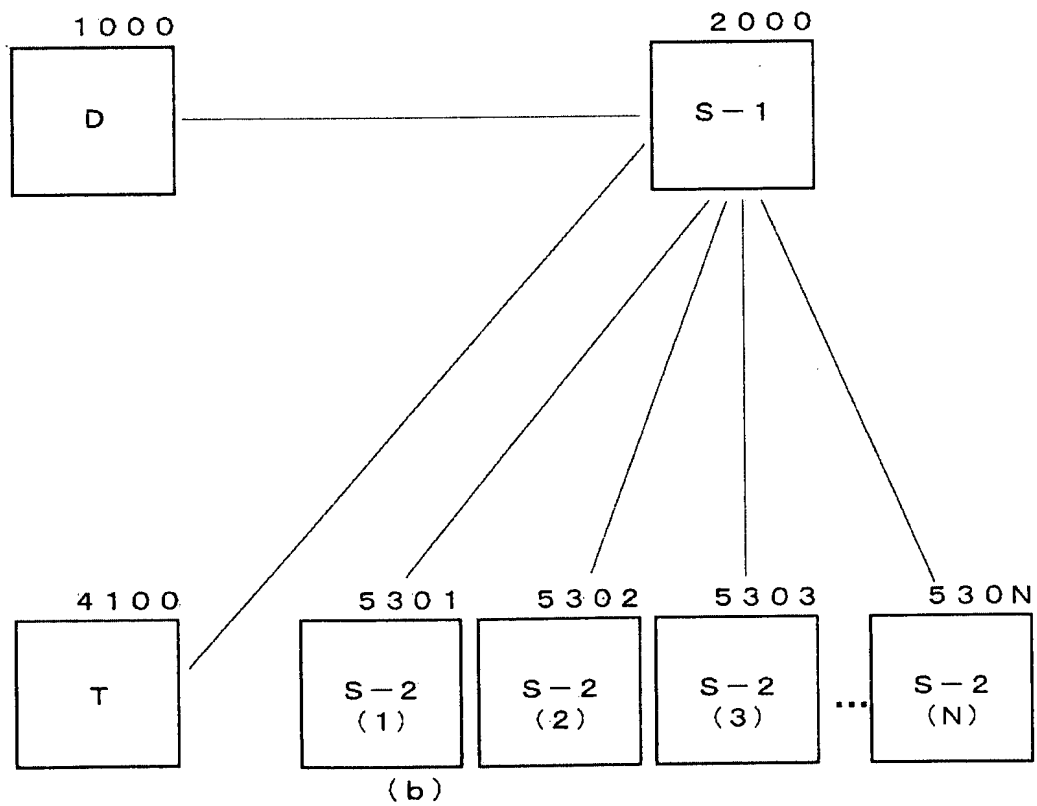
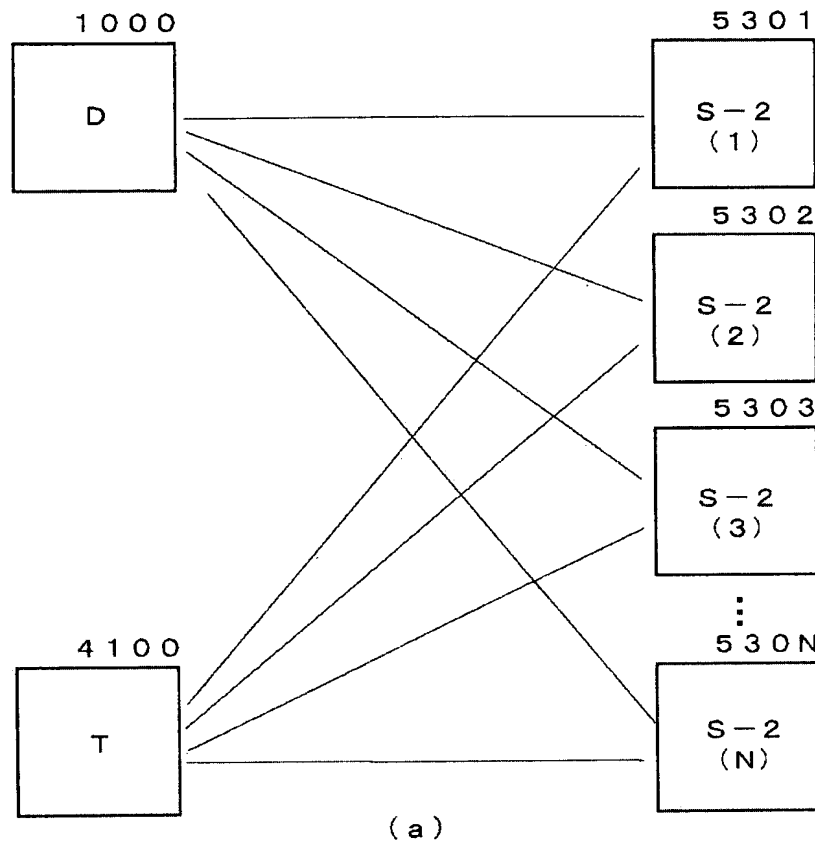


FIG. 41